

means for causing flexing of said piezoelectric material and vibration of said membrane thereby causing ultrasonic excitation of the transmission media adapted to cause lysis of spore or cell samples in said cavity.

Claim 84. (New) In a micro-fluidic system, the improvement comprising:

a micro-sonicator for spore and cell lysis using ultrasonic excitation of the spore or cell, said micro-sonicator including a container having a cavity therein and containing ultrasonic transmission media, a membrane positioned over said cavity, and means for causing vibration of said membrane producing ultrasonic excitation of spore or cell located in said cavity.

Claim 85. (New) A device for spore or cell lysis comprising:

a container having a chamber for holding spore or cell samples,  
a quantity of ultrasonic transmission media in said chamber,  
a membrane forming at least one wall of the chamber, and  
an ultrasonic transducer in contact with said membrane for transmitting ultrasonic waves to the chamber.